REMARKS

This Amendment is being filed in response to the Office Action mailed on June 7, 2006. All objections and rejections are respectfully traversed.

Claims 1-23 are pending in the application. Claims 1 and 13 have been amended to correct clerical errors.

Applicant notes with appreciation that the Examiner found Claim 23 allowable, and Claims 7, 8, 11, 19, and 20 would be allowable if rewritten in independent form. Applicants' respectfully point out that Claim 11, as filed, is in independent form, and thus should be in condition for allowance. Applicants have amended Claims 7 and 19 to be in independent form, including all the limitation of their respective base claims, and thus are in condition for allowance. Because Claims 8 and 20 are dependent on allowable Claims 7 and 19, respectively, they too are in condition for allowance.

Claims 1-5, 9, 12-17 and 21 have been rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,335,550 to Stern ("Stern"). Claims 1-6, 9, 10, 12-18, 21, and 22 have been rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,862,671 to Lessard, et al. ("Lessard").

Without limitation, a cryopump valve assembly embodying the invention will be discussed. The assembly provides multiple valve access into a cryopump volume using a single penetration. The single ducted valve assembly 300 provides a purge valve 345 connecting the assembly 300 to a cryopump with a coaxial connection 400 having an inner duct 410 and an outer duct 420. A pressurized gas interface 340 connects a pressurized purge gas source to the cryopump through the inner duct 410. A rough valve 325 can connect the outer duct 420 of the assembly to a rough vacuum pump, and a relief valve 305 can connect the outer duct of the assembly to an exhaust stack.

Independent claim 1, as amended, recites:

> 1. A cryopump having a ducted integrated valve assembly, the valve assembly comprising:
> a housing of the assembly having an interface to a cryopump;
> a coaxial connection at the interface, connecting to an inner duct and an outer duct of the assembly;
> an exhaust valve connecting the outer duct to an exhaust; and
> a purge valve connecting a pressurized gas source to the cryopump through the inner duct.

Similarly, Claim 12 recites:

> 12. A cryopump having a ducted integrated valve assembly, the valve assembly comprising:
>
> a housing having a single fluid duct;
>
> a rough valve connecting the duct to a rough vacuum pump; and
>
> a relief valve connecting the duct to an exhaust stack.

The 35 U.S.C. 102(b) Rejections

Under 102(b), "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros v Unton Oil Co. of Californiu*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Because the prior art cited by the Examiner fails to disclose each and every element of the claims of the present application, Applicant believes the cited art does not anticipate the present claims.

1. Stern Does Not Disclose A Coaxial Connection That Provides Multiple Valve Functions With A Single Penetration Into The Cryopump

The Examiner found claims 1-5, 9, 12-17 and 21 anticipated under 35 U.S.C. 102(b) by Stern.

Stern illustrates a typical cyropump of the prior art having multiple penetrations into the cryopump volume. The cryopump of Stern has a purge valve 137 that has a dedicated ducted entry into the cryopump volume. Claim 1 of the present application, however, claims a

cryopump having a valve assembly, the valve assembly comprising multiple valve functions (i.e. both an exhaust valve and a purge valve) with a single interface to the cryopump through a coaxial connection into the cryopump volume. Further, the Examiner indicates that Stern shows an exhaust valve 136 "connected to a housing (the neck of the cryopump)." However, Stern indicates that item 136 is a "cap" for flange 136a, for which the cryopump can be attached to the chamber to be evacuated. *See* Stern, Col. 4, lines 7-15. In the present application, the exhaust valve is not the conduit to the chamber to be evacuated, but rather it may provide relief from the build up of gas pressure during cryopump regeneration when gases that have already been pumped are released. *See* Specification, Page 2 lines12-17; Page 5, lines 11-16. Thus, Stern fails to disclose the "valve assembly" having "a coaxial connection. . . connecting to an inner duct and an outer duct of the assembly" and an "exhaust valve connecting the outer duct to an exhaust" as claimed in independent Claims 1 and 13, and dependent claims based thereon. Therefore, Claims 1-5, 9, 13-17 and 21 are in condition for allowance.

Similarly, because Stern does not disclose a ducted integrated valve assembly comprising a housing having a single fluid duct with both a rough valve and a relief valve, Stern does not anticipate Claim 12. Therefore, Claim 12 is in condition for allowance.

Lessard Does Not Teach A Ducted Valve Assembly

The Examiner found Claims 1-6, 9, 10, 12-18, 21, and 22 anticipated 35 U.S C. 102(b) by Lessard

Similar to Stern, Lessard shows a cryopump system having multiple valves with multiple penetrations into the cryopump volume. The Examiner indicates that Lessard shows a cryopump having "a housing 90 interfacing with cryopump with a coaxial connection to a purge gas 84 through a purge valve 80 and an exhaust valve 86 connected the a roughing pump which will be connected to an exhaust stack." However, the cryopump of Lessard illustrates an "elbow" 90 of the cryopump that provides two separate valve entries (valve entry 80 and valve entry 86) into a ducted cryopump. The claims of the present application involve an "integrated valve assembly" that comprises "a coaxial connection. . . connecting to an inner duct and an outer duct of the assembly" and both an "exhaust valve connecting the outer duct to an exhaust" and a "purge valve" as claimed in independent Claims 1 and 13, and dependent claims based thereon. On the

other hand, Lessard teaches a series of separate valve components (80 and 86) connected together. For similar reasons, Lessard fails to disclose a ducted integrated valve assembly as in Claim 12, and therefore does not anticipate Claim 12.

By using an integrated valve assembly having a single entry into a cryopump, embodiments of the present invention may minimize the intrusions into a cryopump, required valve parts, and/or connection points for pressurized gases. Specification Page 3, lines 13 – 27.

Therefore, Claims 1-6, 9, 10, 12-18, 21, and 22 are in condition for allowance.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C

By_____
F. James Coe
Registration No. 46,650
Telephone: (978) 341-0036
Facsimile: (978) 341-0136

Concord, MA 01742-9133
Dated: 11/7/06